Procedure: 2043	SOFTWARE SUPPORT	DATE: 05/23/91

TITLE: Procedures for the Coding and Use of CICS Applications

Purpose

To establish the procedures to be observed in the design, coding and use of CICS applications.

Scope and Applicability

The following procedures are applicable to all CICS applications submitted for use on ITD Hoover facilities. These procedures apply to both CICS production and test systems unless reference is specifically made to either.

Definitions

Mapset means the logical grouping of BMS map(s) used to define formatted screen(s).

MDT means Modified Data Tag.

QSAM means queued sequential access method.

See PSA Glossary for other definitions.

Organization and Responsibilities

The Software Support Subdivision (SSS) of ITD is responsible for the installation, testing and maintenance of the CICS system.

SSS has the responsibility of managing the use of CICS as installed in ITD facilities to ensure equitable service to all CICS applications and to prevent the involuntary misuse of vital operating software system components.

Specific areas of responsibility include:

(a) the timely revision and issuance of future revisions to these procedures.

(b) the approval authority for use of CICS facilities restricted by

SSS. See paragraph "Facilities Requiring Specific Approval".

(c) maintenance of all system control tables.

(d) providing the adequate safeguards to increase file integrity and reduce vulnerability.

SSS will not be responsible for coordinating the sharing of files or maps between multiple programs or agencies. That function will be the user's responsibility.

Availability of CICS

Production Time - refer to the advisory regarding the availability of the CICS production system(4046 "CICS in Production Mode").

Testing Time- refer to the advisory regarding the availability of the CICS test system. (4059 "CICS Test Mode Responsibilities").

Access to CICS

Access to the CICS production system is via a choice from the user's NES Application Selection Menu, or the command 'C' or 'CICS' from the VTAM menu screen. From VTAM, the subsequent screen will require name and password information.

Access to the CICS test system is via a choice from the user's NES Application Selection Menu, or the command 'CTST' from the VTAM menu screen. From VTAM, the subsequent screen will require name and password information.

Exit from CICS

Exit from either the CICS production or test system is via the command 'LOGO' or 'DISC'. This command will return the terminal to VTAM or NES.

Terminal Devices Supported

Only 3270-compatible terminal devices will be supported.

Languages Used

All CICS applications will be written in COBOL for OS/390 command level.

Any assembler language programs require approval by SSS.

CICS Naming Conventions

Transaction ID. The transaction ID must be a mnemonic unique to CICS. It must be composed of four alphabetic characters and may not begin with these letters reserved for system use: 'C', 'DB' AND 'DC'.

Transaction Mapset. A transaction's Mapset name must include that Transaction ID followed by any three character mnemonic which would indicate it to be a mapset. Exceptions to this will be allowed for mapsets which are accessible by multiple applications.

A file's ddname must have the prefix 'C', followed by the ID of the transaction which accesses that file, followed by any three character mnemonic. Exceptions to this will be allowed for files which are accessible by multiple applications.

A transaction's temporary storage queue will have its ID derived from the Transaction ID concatenated with the initiating Terminal ID.

An extra partition transient data destination must have the prefix 'XT' followed by a two alphabetic character mnemonic.

An intra-partition transient data queue must have the prefix 'IT' followed by a two alphabetic character mnemonic.

CICS Data Sets

CICS data sets will be VSAM data sets with the exception of journals and transient datasets which are required to be QSAM.

CICS data sets shared with any non-CICS region or address space are the user's responsibility. Neither CICS nor SSS can assure the integrity of shared data sets.

Facilities Not Supported by CICS

The CICS facilities that are not available for use include (a) the COBOL Trace Option, (b) Macro level programming and (c) Conversational programs

Facilities Requiring Specific Approval

The CICS facilities that require specific approval of SSS are: (a) use of the common work area (CWA); (b) assembler language: (c) interval control(ICE); and, (d) terminal page-building.

Security Facilities

CICS signon security uses RACF. Unless a security request is made, no signon security will be implemented for a new transaction.

Program and file authorization procedures must be followed for all applications under CICS. CICS authorization forms and instructions are available from SSS.

Because RACF is used, the 'OPID' option of the CICS 'ASSIGN' command is not valid. A subroutine is available to provide RACF security information to an application. Refer to the advisory regarding this subject 4057 "RACF Availability in CICS".

There is no application or file security on the test system (all test files should contain test data only).

Terminal Control

Use of program-function (PF) keys is encouraged. The function of each key should be displayed on the screen.

Use of program - attention (PA) keys is reserved by SSS.

The bottom line of the terminal screen is reserved for error messages, informational-type messages, and PF key designation.

The 'CLEAR' key must be coded to return all pseudo conversational programs to CICS.

Journaling

One journal will be assigned to each user department on request. The user department will be responsible for creating and maintaining its own journal. SSS will provide the facility to perform daily journal off-loading.

One common journal will be available for all users. This shared journal will be maintained by SSS and off-loaded nightly to user files.

Use of the common journal for recording data other than that which is created automatically as the result of a file request, requires SSS approval.

Database

Applications which access the IDMS database are required to use the standard error routine 'IDMS-STATUS.' See paragraph "Error Routines".

The JCL for compiling and link-editing CICS applications which use the database is available on ISPF panel 5.

All on-line applications using IDMS are subject to IDMS standards and procedures.

Help Screens

At least one help screen (defined as a BMS map) describing all available user-operator commands for an application is required.

The help screen should automatically be the first map available or should be easily accessible by some other means.

Method of access to the help screen should be defined on every screen. The bottom line is available for this purpose.

The PF1 key is required for accessing the help screen.

Error Routines

Checks should be made for CICS error conditions via the Handle Condition commands or by using the RESP option on the command and checking the response code after execution. If a NOTOPEN condition could be encountered in a program, one of these options should be used to display a distinctive error message to the user. The NOTFND and DUPREC conditions should also be handled in the program.

The standard CICS error routine 'S076J221' is required to handle CICS error conditions not processed by those above. Refer to the procedure regarding this routine, 2027 "Implementation of the CICS Standard Error Routine".

The standard error routine 'IDMS-STATUS.' is required for applications which access IDMS. Refer to the procedure regarding this routine, 2033 "IDMS Program Code".

Recovery Procedures

Dynamic Transaction Backout is supported.

Emergency restart is currently used.

Dump control is standard. No CICS command which explicitly requests a dump will be allowed in production applications.

Abends

Any production transactions which abend will be disabled and not be available for use until that application has been corrected and

thoroughly tested.

User abends with a dump will not be allowed.

Execution Diagnostic Facility (EDF)

EDF is available for application testing.

Because there is no resource security through EDF, all test files should contain test data only.

Operator Control

ITD Hoover Operations will perform master terminal operator functions to control availability of files and applications.

Users on the CICS test system have limited operator function. Refer to the appropriate advisories (4037 "Relinking Newly Recataloged CICS Modules" and 4075 "CICS Test System Opening and Closing").

Command Level Interpreter (CECI)

The Command level Interpreter application, CECI, is available for testing CICS commands.

CECI may not be used to test the CICS 'ROUTE' command.

The CICS Application Programming Reference Manual describes its use.

Unnecessary Data Transmission

All mapset definitions will be coded to include the CTRL=(FREEKB,FRSET) parameter of the DFHMSD macro. No FSET parameters will be included on the DFHMDF macros.

Discretion should be used when setting MDT's on so that only the fields that are actually entered will be received from a terminal.

Low-values should be moved to the fields of a map when it is determined that it is not necessary to send the fields to a terminal.

The last SEND command executed will use the LAST keyword.

Modular Programming

Use of modular programming is encouraged. A "DRIVER" program is invoked by a transaction ID and transfers control to various programs depending

on the processing to be performed. This breaks up one large, all encompassing program into smaller, specialized programs.